

## Increased Function Using a Program of Graded Exposure in the Form of Strengthening, Functional Training, and Patient Education with a Fearful Patient with Knee Osteoarthritis: A Case Report

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### ABSTRACT

**Background:** Knee osteoarthritis (OA) is a painful condition that outpatient physical therapists commonly see in the clinic. A recent Clinical Practice Guideline (CPG) developed to guide treatment for this population strongly recommended patient education on the disease process and land-based strengthening. Though not mentioned in the CPG, graded exposure is a viable treatment for painful diagnoses like knee OA where fear plays a large part in movement patterns. Graded exposure is a treatment of progressively attempting a feared situation to gain control at each step and has shown to be effective for other musculoskeletal conditions, like low back pain. The purpose of this case report is to describe the effect of graded exposure on function in a fearful patient with knee OA with strength and motor control impairments.

**Methods:** A 67-year-old woman with knee OA received treatment at an outpatient physical therapy clinic. She was fearful of standing up from sitting and navigating stairs due to pain. Interventions included a combination of strength training with a motor control component, functional training including balance and stair training, and pain neuroscience education. First, the therapist taught the patient to perform knee active range of motion exercises before standing up from sitting. Doing these exercises decreased her pain during sit-to-stand activities and provided her a sense of control over her pain. Then, the therapist treated initial impairments of decreased strength and dynamic valgus via strength training with a focus on hip abductor strength to improve awareness of dynamic valgus in squatting positions. Lastly, the therapist added single leg balance activities and eccentric strengthening to stair training intended to increase her self-efficacy in going downstairs. These interventions were progressed throughout 10 sessions.

**Results:** Average Patient-Specific Functional Scores (PSFS) scores increased by 3 points, indicating a clinically meaningful improvement for orthopedic knee conditions at the end of treatment. The patient also showed observable improved confidence, strength and movement patterns. There was no reported change in the intensity of pain.

**Discussion:** Graded exposure can be used to lower fear of movement in patients with knee OA. Using the movement impairment system, therapists can then select exercises that will be relevant to the feared movements and gradually expose the patients to these with task-specific training. With these interventions working together, self-efficacy in patients can increase to further lead to increases in function.

**Conclusion:** When treating fearful patients with knee OA, a program of graded exposure may be considered to address feared movements and increase function.

**References:**

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